

FORM NO. 22 R 10/09 SUBMIT IN QUADRUPPLICATE TO: ARM 36.22.307
 ARM 36.22.601

MONTANA BOARD OF OIL AND GAS CONSERVATION
2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102

Lease Name: **Butch Cassidy** **RECEIVED**

Lease Type (Private/State/Federal):
 Private **DEC 04 2019**

Application for Permit To:

Drill Deepen Re-enter
 Oil Gas Other

Well Number: 1H **MONTANA BOARD OF OIL & GAS CONSERVATION - BILLINGS**

Operator: Prima Exploration, Inc.
 Address: 250 Filmore St, Suite 500
 City: Denver State: CO Zip: 80206
 Telephone Number:

Field Name or Wildcat:
 Elm Coulee Northeast

Unit Name (if applicable):
 N/A

Surface Location of Well (quarter-quarter and footage measurements):
 NW 1/4 NE 1/4 Sec. 18 T25N R59E 325' FNL 2010' FEL

Objective Formation(s):
 Bakken

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:
 TD - 20,779' MD.
 BHL - ~~SE~~ 1/4 ~~SE~~ 1/4 Sec. 19 T25N R59E 200' FSL 500' FEL
 SW SW

Township, Range, and Section:
 T25N R59E Section 18

County:
 Richland

Elevation (indicate GL or KB):
 2001' GL

Size and description of drilling/spacing unit and applicable order, if any:	Formation at total depth:	Anticipated Spud Date:
1280 Acre Section 18/19, MT Docket 118-2019	Bakken	3/20/2020

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
13 1/2"	9 5/8"	36#	J-55 LTC	2,200'	605	See Attached
8 3/4"	7"	29#/32#	P110 BTC	10,965'	685	See Attached
6"	4 1/2"	11.6#/13.5#	P110 BTC	20,779'	545	See Attached

Describe Proposed Operations:
 Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.
 Please see attached programs.
 Prima Exploration, Inc. requests variance to NOT run Open hole logs on the subject well. Offset logs can be found for the Empire North Dakota LLC., Vanderhoof C-1, Sec. 18 T25N R59E, Richland County, MT.

BOARD USE ONLY *By MN Consulting Inc.*

Approved (date) **DEC 19 2019** Permit Fee **\$150.00**
 By *[Signature]* Check Number **5129**
 Title *Petroleum Engineer* Permit Expires **JUN 19 2020**
 Permit Number **32488**

The undersigned hereby certifies that the information contained on this application is true and correct:
 Signed (Agent) *[Signature]* Title **Ren Gardner - Agent/Petroleum Engineer**
 Date **12/2/2019**
 Telephone Number **406-259-4878**

THIS PERMIT IS SUBJECT TO THE CONDITIONS OF APPROVAL STATED ON THE BACK API Number: 25 - **083** - **23380**

Samples Required: NONE ALL _____ FROM _____ feet to _____ feet
 Core chips to address below, full cores to USGS, Core Laboratory, Arvada, CO. Required samples must be washed, dried and delivered prepaid to:
 Montana Board of Oil and Gas Conservation
 2535 St. Johns Avenue
 Billings, MT 59102

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SUPPLEMENTAL INFORMATION

MONTANA BOARD OF OIL & GAS CONSERVATION - BILLINGS

Note: Additional information or attachments may be required by Rule or by special request.

1. Attach a survey plat certified by a registered surveyor. The survey plat must show the location of the well with reference to the nearest lines of an established public survey.
2. Attach an 8 1/2 x 11" photocopy of that portion of a topographic map showing the well location, the access route from county or other established roads, residences, and water wells within a 1/2 mile radius of the well.
3. Attach a sketch of the well site showing the dimensions and orientation of the site, the size and location of pits, topsoil stockpile, and the estimated cut/fill at the corners and centerstake. (Note: the diagram need not be done by an engineer or surveyor). Attach a sketch of a top view and two side views of the reserve pit(s), if utilized. The reserve pit sketch must show the length, width, depth, cut and fill, amount of freeboard, area of topsoil stockpile, and the height and width of berms.
4. Describe the type and amount of material or liner, if any, to be used to seal the reserve pit. If a synthetic liner is used, indicate the liner thickness (mils), bursting strength, tensile strength, tear strength, puncture resistance, hydrostatic resistance, or attach the manufacturer's specifications.
5. Describe the proposed plan for the treatment and/or the disposal of reserve pit fluids and solids after the well is drilled. If the operator intends to dispose of or treat the reserve pit contents off-site, specify the location and the method of waste treatment and disposal. (Note: The operator must comply with all applicable federal, state, county, and local laws and regulations with regard to the handling, transportation, treatment, and disposal of solid wastes.)
6. Does construction of the access road or location, or some other aspect of the drilling operation require additional federal, state, or local permits or authorizations? If yes, indicate the type of permit or authorization required:

- No additional permits needed
- 310 Permit (apply through county conservation district)
- Air quality permit (apply through Montana Department of Environmental Quality)
- Water discharge permit (apply through Montana Department of Environmental Quality)
- Water use permit (apply through Montana Department of Natural Resources and Conservation)
- Solid waste disposal permit (apply through Montana Department of Environmental Quality)
- State lands drilling authorization (apply through Montana Department of Natural Resources and Conservation)
- Federal drilling permit (specify agency)
- Other federal, state, county, or local permit or authorization: (specify type) _____

NOTICES:

1. Date and time of spudding must be reported to the Board verbally or in writing within 72 hours after the commencement of drilling operations.
2. The operator must give notice of drilling operations to the surface owner as required by Section 82-10-503, MCA, before the commencement of any surface activity.

BOARD USE ONLY

CONDITIONS OF APPROVAL

The operator must comply with the following condition(s) of approval:

WARNING: Failure to comply with conditions of approval may void this permit.

CELLS WITH BLUE BACKGROUND ARE THE ONLY CELLS TO BE EDITED

Fracture Start Date/Time:	
Fracture End Date/Time:	
State:	
County:	
API Number:	
Operator Number:	
Well Name:	
Federal Well:	
Infant Well:	
Longitude:	
Latitude:	
Long/Lat Projection:	
True Vertical Depth (TVD):	
Total Clean Fluid Volume* (gal):	8,344,602

Buhl Cassidy, L/H
 Loc. 475528/029 N Long 104°45'06" W
 Richland County, MT

PRIMA
 Prime Exploration, Inc.
 250 Effco Blvd, Suite 500
 Denver, CO 80206



Additive	Specific Gravity	Additive Quantity	Mass (lbs)
Water	8.34	8,344,602	69,593,981
DVA-75	(already reported in lbs)	378	378
FRP-15	15.937	15,937	146,706
HCL-15	8.95	7,500	67,140
Liberty Clean Out Fluid	6.81	20	136
BioClear 5000	9.54	834	7,790
Surf-Pig 430	8.26	8,338	68,889
Crystalline Silica Quartz / US Silica	(already reported in lbs)	10,164,375	10,164,375
DFE-36S	8.76	2	13
ACI-300	8.76	30	263
WA-100	8.92	15	134
IC-50S	10.84	60	650

Total Slurry Mass (Lbs)
 80,049,954

Ingredients Section:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Carrier	7732-18-5	100.00%	69,593,981	86.93819%	
DVA-75	Liberty Oilfield Services	Diverting Agent	MSDS and Non-MSDS Ingredients Listed Below					
FRP-15	Liberty Oilfield Services	Friction reduction	MSDS and Non-MSDS Ingredients Listed Below					
HCL-15	Liberty Oilfield Services	Solvent	MSDS and Non-MSDS Ingredients Listed Below					
Liberty Clean Out Fluid	Liberty Oilfield Services	Cleanup Solution	MSDS and Non-MSDS Ingredients Listed Below					
BioClear 5000	Lubrizol	Bioicide	MSDS and Non-MSDS Ingredients Listed Below					
Surf-Pig 430	Innospec	Flowback Additive	MSDS and Non-MSDS Ingredients Listed Below					
Crystalline Silica Quartz / US Liberty Oilfield Services	WST	Sand	MSDS and Non-MSDS Ingredients Listed Below					
DFE-36S	WST	Defoamer	MSDS and Non-MSDS Ingredients Listed Below					
ACI-300	WST	Corrosion Inhibitor	MSDS and Non-MSDS Ingredients Listed Below					
WA-100	WST	Wetting Agent	MSDS and Non-MSDS Ingredients Listed Below					
IC-50S	WST	Iron Control	MSDS and Non-MSDS Ingredients Listed Below					
The trade name(s) of the additive(s) used, supplier(s), and the purpose(s) of the additive(s) are listed above. The ingredient(s) for the above additive(s) are listed below.								
Crystalline Silica (quartz)	Liberty Oilfield Services	Sand	Crystalline Silica (quartz)	14808-60-7	99.90%	10,154,211	12.6484%	
Aluminum Oxide	Liberty Oilfield Services	Sand	Aluminum Oxide	1344-28-1	1.00%	101,634	0.12698%	
Water	Liberty Oilfield Services	Friction reduction	Petroleum distillates, hydrofretted light	64742-07-8	45.00%	65,793	0.08219%	
Water	Liberty Oilfield Services	Flowback Additive	Water	7732-18-5	95.00%	65,444	0.08175%	
Iron Oxide	Liberty Oilfield Services	Solvent	Iron Oxide	1309-57-1	85.00%	57,069	0.07129%	
Titanium Dioxide	Liberty Oilfield Services	Sand	Titanium Dioxide	13463-67-7	0.10%	10,164	0.01270%	
Hydrochloric Acid	Liberty Oilfield Services	Solvent	Hydrochloric Acid	7647-01-0	15.00%	10,071	0.01258%	
Benzene Sulfonic Acid, dodecyl comp. with 2-aminoethanol	Innospec	Flowback Additive	Benzene Sulfonic Acid, dodecyl comp. with 2-aminoethanol	26856-07-7	10.00%	6,889	0.00861%	
Diethylene sulfonate, triethanolamine salt	Liberty Oilfield Services	Friction reduction	Diethylene sulfonate, triethanolamine salt	2732-41-7	10.00%	6,889	0.00861%	
Poly(oxy-1,2-ethanediyl), a-tridecyl-hydroxy-, branched	Liberty Oilfield Services	Friction reduction	Poly(oxy-1,2-ethanediyl), a-tridecyl-hydroxy-, branched	69011-36-5	3.00%	4,386	0.00548%	
Sodium Alpha Olefin Sulfonate	Innospec	Flowback Additive	Sodium Alpha Olefin Sulfonate	68439-57-6	5.00%	3,444	0.00430%	
2-hydroxypropane-1,2,3-tricarboxylic acid	WST	Iron Control	2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00%	390	0.00049%	
2,2-dibromo-3-nitropropanamide	Liberty Oilfield Services	Bioicide	2,2-dibromo-3-nitropropanamide	10222-01-2	5.00%	369	0.00049%	
Polyacetic Resin	Liberty Oilfield Services	Diverting Agent	Polyacetic Resin	9051-89-2	100.00%	378	0.00047%	
Oxysulfonate and paraffinic stream	Liberty Oilfield Services	Cleanup Solution	Oxysulfonate and paraffinic stream	876065-86-0	99.00%	135	0.00017%	
Ethoxylated Decyl Alcohol	WST	Wetting Agent	Ethoxylated Decyl Alcohol	78330-20-8	40.00%	54	0.00007%	
2-Propyl-1-ol compound with methyl-oxirane	WST	Corrosion Inhibitor	2-Propyl-1-ol compound with methyl-oxirane	38172-91-7	15.00%	39	0.00005%	
Triethanolamine	Innospec	Flowback Additive	Triethanolamine	102-71-6	0.01%	6	0.00001%	
Ethanolamine	Innospec	Flowback Additive	Ethanolamine	141-45-5	0.01%	6	0.00001%	
C.I. Solvent Yellow 33	Liberty Oilfield Services	Cleanup Solution	C.I. Solvent Yellow 33	8003-22-3	1.00%	1	0.00000%	
Polypropylene Glycol	WST	Defoamer	Polypropylene Glycol	25322-69-4	10.00%	1	0.00000%	
Polydimethylsiloxane	WST	Defoamer	Polydimethylsiloxane	63148-62-9	6.00%	1	0.00000%	

*Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(c) and Appendix D.

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